

**Commonwealth of Kentucky
Environmental and Public Protection Cabinet
Department for Environmental Protection
Division for Air Quality
803 Schenkel Lane
Frankfort, Kentucky 40601
(502) 573-3382**

**AIR QUALITY PERMIT
Issued under 401 KAR 52:040**

Permittee Name: ABARTA Oil & Gas Co., Inc. (Martha Plant)
Mailing Address: 1000 RIDC Plaza, Pittsburg, PA 15238

Source Name: ABARTA Oil & Gas Co., Inc. (Martha Plant)
Mailing Address: KY 469
Martha, KY 41159

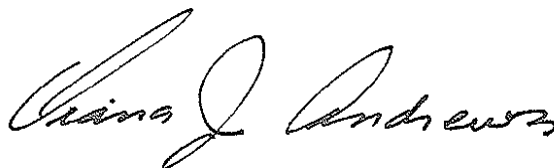
Source Location: Same as Above

Permit ID: S-07-076 R1
Agency Interest #: 38881
Activity ID: APE20070002
Review Type: Minor Source, Operating
Source ID: 21-127-00024

Regional Office: Ashland Regional Office
1550 Wolohan Drive, Suite 1
Ashland, KY 41102
(606) 929-5285

County: Lawrence

Application
Complete Date: March 30, 2007
Issuance Date: July 17, 2007
Revision Date: December 21, 2007
Expiration Date: July 17, 2017



**John S. Lyons, Director
Division for Air Quality**

SECTION A - PERMIT AUTHORIZATION

Pursuant to a duly submitted application the Kentucky Division for Air Quality hereby authorizes the operation of the equipment described herein in accordance with the terms and conditions of this permit. This permit has been issued under the provisions of Kentucky Revised Statutes Chapter 224 and regulations promulgated pursuant thereto.

The permittee shall not construct, reconstruct, or modify any affected facilities without first submitting a complete application and receiving a permit for the planned activity from the permitting authority, except as provided in this permit or in 401 KAR 52:040, State-origin permits.

Issuance of this permit does not relieve the permittee from the responsibility of obtaining other permits, licenses, or approvals that may be required by the Cabinet or other federal, state, or local agencies.

SECTION B - EMISSION POINTS, EMISSION UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS

Emission Unit 100 (EP-101, 102): Sulfur Recovery Unit (SRU)

Description:

Amine (MEA) solution is used to absorb hydrogen sulfide in the high pressure and low pressure absorbers in sweetening sour natural gas at Martha Gas Plant. Rich MEA is then regenerated and the regenerator off gas (acid gas) containing hydrogen sulfide and carbon dioxide is then directed to the Claus thermal reactor and three stage catalytic reactors to convert hydrogen sulfide to elemental sulfur.

Emission Point (EP-101): SRU Process

Description:

Model: Claus Reactor
Construction Date: 1985
Capacity: 2.9 tons per day

Emission Point (EP-102): SRU Oxidizer

Description:

Model: NA
Construction Date: 1985
Fuel Input: 0.78 mmBtu/hr
Primary Fuel: Natural Gas (Fuel gas used to maintain reaction temperature)
Conversion Efficiency: NA

APPLICABLE REGULATIONS:

40 CFR 60 Subpart LLL- Standards of performance for onshore natural gas processing: SO₂ emissions. The provision of the subpart applicable to the facility constructed after January 20, 1984, that process natural gas sweetening followed by a sulfur recovery unit.

NON-APPLICABLE REGULATIONS:

401 KAR 59:015- New Indirect Heat Exchangers does not apply. The incinerator and oxidizer are not an indirect heat exchanger because a heat transfer medium is not used.

SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit 100 (EP-101, 102): Sulfur Recovery Unit (SRU)

1. Operating Limitations:

Refer to the compliance demonstration method for Section **2. Emission Limitations.**

2. Emission Limitations:

Pursuant to 40 CFR 60.642(b), the owner or operator shall achieve at a minimum, an SO₂ emission reduction efficiency of 97.5%.

Compliance Demonstration Method:

For a minimum emission reduction of 97.5% and based on a maximum hydrogen sulfide of sulfur input of 2.9 tons per day, the sulfur dioxide emission rate shall not exceed 21.8 lbs/hr, 523 lbs/day, and 95.5 tons/year. During startup, shutdown, maintenance and malfunction of the SRU, the natural gas sweetening process shall not be operational to avoid SO₂ emissions above its threshold limitation. Refer to **3. Testing Requirements, 4. Monitoring Requirements, 5 Recordkeeping Requirements, and 6. Reporting Requirements.**

3. Testing Requirements:

Method 6 shall be used to determine the SO₂ concentration from the incinerator. A performance test shall be conducted to determine the reduction efficiency of the SRU using the test methods and procedures as described in 40 CFR 60.644. The performance test shall be conducted within 240 days of issuance of the final permit S-07-076.

4. Monitoring Requirements:

a. The owner or operator subject to the provisions of 40 CFR 60.642 (a) or (b) shall install, calibrate, maintain, and operate monitoring devices or perform measurements to determine the following information on a daily basis:

- (1) The accumulation of sulfur product over each 24-hour period: The monitoring method may incorporate the use of an instrument to measure and record the liquid sulfur production rate, or may be a procedure for measuring and recording the sulfur liquid levels in the storage tanks with a level indicator or by manual soundings, with subsequent calculation of the sulfur production rate based on the tank geometry, stored sulfur density, and elapsed time between readings. The method shall be designed to be accurate within ± 2 percent of the 24-hour sulfur accumulation.
- (2) The H₂S concentration in the acid gas from the sweetening unit for each 24-hour period: At least one sample per 24-hour period shall be collected and analyzed using the method specified in §60.644(b)(1). The Administrator may require the owner or operator to demonstrate that the H₂S concentration obtained from one or more samples over a 24-hour period is within ± 20 percent of the average of 12 samples collected at equally spaced intervals during the 24-hour period. In instances where the H₂S concentration of a single sample is not within ± 20 percent of the average of the 12 equally spaced samples, the Administrator may require a more frequent sampling schedule.

SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit 100 (EP-101, 102): Sulfur Recovery Unit (SRU)

- (3) The average acid gas flow rate from the sweetening unit: The owner or operator shall install and operate a monitoring device to continuously measure the flow rate of acid gas. The monitoring device reading shall be recorded at least once per hour during each 24-hour period. The average acid gas flow rate shall be computed from the individual readings.
 - (4) The sulfur feed rate (X): For each 24-hour period, X shall be computed using the equation in 40 CFR 60.644(b)(3).
 - (5) The required sulfur dioxide emission reduction efficiency for the 24-hour period: The sulfur feed rate and the H₂S concentration in the acid gas for the 24-hour period as applicable, shall be used to determine the required reduction efficiency in accordance with the provisions of 40 CFR 60.642(b).
- b. Where compliance is achieved through the use of an oxidation control system or a reduction control system followed by a continually operated incineration device, the owner or operator shall install, calibrate, maintain, and operate monitoring devices and continuous emission monitors as follows:
- (1) A continuous monitoring system to measure the total sulfur emission rate (E) of SO₂ in the gases discharged to the atmosphere. The SO₂ emission rate shall be expressed in terms of equivalent sulfur mass flow rates (kg/hr (lb/hr)). The span of this monitoring system shall be set so that the equivalent emission limit of 40 CFR 60.642(b) will be between 30 percent and 70 percent of the measurement range of the instrument system.
 - (2) Except as provided in paragraph (b)(3) of 40 CFR 60.646: A monitoring device to measure the temperature of the gas leaving the combustion zone of the incinerator, if compliance with 40 CFR 60.642(a) is achieved through the use of an oxidation control system or a reduction control system followed by a continually operated incineration device. The monitoring device shall be certified by the manufacturer to be accurate to within ± 1 percent of the temperature being measured.
 - (3) Upon promulgation of a performance specification of continuous monitoring systems for total reduced sulfur compounds at sulfur recovery plants, the owner or operator may, as an alternative to paragraph (b)(2) of 40 CFR 60.646, install, calibrate, maintain, and operate a continuous emission monitoring system for total reduced sulfur compounds as required in paragraph (d) of 40 CFR 60.646 in addition to a sulfur dioxide emission monitoring system. The sum of the equivalent sulfur mass emission rates from the two monitoring systems shall be used to compute the total sulfur emission rate (E).

SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit 100 (EP-101, 102): Sulfur Recovery Unit (SRU)

- c. Where compliance is achieved through the use of a reduction control system not followed by a continually operated incineration device, the owner or operator shall install, calibrate, maintain, and operate a continuous monitoring system to measure the emission rate of reduced sulfur compounds as SO₂ equivalent in the gases discharged to the atmosphere. The SO₂ equivalent compound emission rate shall be expressed in terms of equivalent sulfur mass flow rates (kg/hr (lb/hr)). The span of this monitoring system shall be set so that the equivalent emission limit of 40 CFR 60.642(b) will be between 30 and 70 percent of the measurement range of the system. This requirement becomes effective upon promulgation of a performance specification for continuous monitoring systems for total reduced sulfur compounds at sulfur recovery plants.
- d. For those sources required to comply with paragraph (b) or (c) of 40 CFR 60.646, the average sulfur emission reduction efficiency achieved (R) shall be calculated for each 24-hour clock interval. The 24-hour interval may begin and end at any selected clock time, but must be consistent. The 24-hour average reduction efficiency (R) shall be computed based on the 24-hour average sulfur production rate (S) and sulfur emission rate (E), using the equation in 40 CFR 60.644(c)(1).
- (1) Data obtained from the sulfur production rate monitoring device specified in paragraph (a) of 40 CFR 60.646 shall be used to determine S.
- (2) Data obtained from the sulfur emission rate monitoring systems specified in paragraphs (b) or (c) of 40 CFR 60.646 shall be used to calculate a 24-hour average for the sulfur emission rate (E). The monitoring system must provide at least one data point in each successive 15-minute interval. At least two data points must be used to calculate each 1-hour average. A minimum of 18 1-hour averages must be used to compute each 24-hour average.
- e. In lieu of complying with (b) or (c) of 40 CFR 60.646, those sources with a design capacity of less than 152 Mg/D (150 LT/D) of H₂S expressed as sulfur may calculate the sulfur emission reduction efficiency achieved for each 24-hour period by:

$$R = \frac{K_2 S}{X}$$

Where:

R = The sulfur dioxide removal efficiency achieved during the 24-hour period, percent.

K₂ = Conversion factor, 0.02400 Mg/D per kg/hr (0.01071 LT/D per lb/hr).

S = The sulfur production rate during the 24-hour period, kg/hr (lb/hr).

X = The sulfur feed rate in the acid gas, Mg/D (LT/D).

SECTION B - EMISSION POINTS, EMISSIONS UNITS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit 100 (EP-101, 102): Sulfur Recovery Unit (SRU)

- f. The monitoring devices required in paragraphs (b)(1), (b)(3) and (c) of 40 CFR 60.646 shall be calibrated at least annually according to the manufacturer's specifications, as required by 40 CFR 60.13(b).
- g. The continuous emission monitoring systems required in paragraphs (b)(1), (b)(3), and (c) of 40 CFR 60.646 shall be subject to the emission monitoring requirements of 40 CFR 60.13 of the General Provisions. For conducting the continuous emission monitoring system performance evaluation required by 40 CFR 60.13(c), Performance Specification 2 shall apply, and Method 6 shall be used for systems required by paragraph (b) of 40 CFR 60.646.

5. Recordkeeping Requirements:

- a. Records of the calculations and measurements required in 40 CFR 60.642(a) and (b) and 646(a) through (g) must be retained for at least 2 years following the date of measurement.
- b. Each owner or operator who elects to comply with 40 CFR 60.646 (e) shall keep, for the life of the facility, a record demonstrating the facility's design capacity is less than 150 LT/ day of H₂S expressed in sulfur.

6. Reporting Requirements:

A written report of excess emissions as defined in 40 CFR 60.647(b) shall be submitted to the division semiannually. For the purpose of these reports, excess emissions are defined as:

- a. Any 24-hour period (at constant intervals) during which the average sulfur emission reduction efficiency is less than the minimum required efficiency.
- b. For any affected facility electing to comply with the provisions of 40 CFR 60.646 (b)(2) any 24-hour period during which the average temperature of the gases leaving the combustion zone of the incinerator is less than the appropriate operating temperature as determined during the performance test in accordance with the provisions of 40 CFR 60.646 (b)(2). Each 24-hour period must consist of at least 96 temperature measurements equally spaced over the 24 hours.

SECTION C - GENERAL CONDITIONS

1. Administrative Requirements

- a. The permittee shall comply with all conditions of this permit. Noncompliance shall be a violation of 401 KAR 52:040, Section 3(1)(b) and is grounds for enforcement action including but not limited to the termination, revocation and reissuance, or revision of this permit.
- b. This permit shall remain in effect for a fixed term of ten (10) years following the original date of issue. Permit expiration shall terminate the source's right to operate unless a timely and complete renewal application has been submitted to the Division at least six months prior to the expiration date of the permit. Upon a timely and complete submittal, the authorization to operate within the terms and conditions of this permit, including any permit shield, shall remain in effect beyond the expiration date, until the renewal permit is issued or denied by the Division. [401 KAR 52:040, Section 15]
- c. Any condition or portion of this permit which becomes suspended or is ruled invalid as a result of any legal or other action shall not invalidate any other portion or condition of this permit [Section 1a-11 of the *Cabinet Provisions and Procedures for Issuing State-Origin Permits* incorporated by reference in 401 KAR 52:040 Section 23].
- d. Pursuant to materials incorporated by reference by 401 KAR 52:040, this permit may be revised, revoked, reopened, reissued, or terminated for cause. The filing of a request by the permittee for any permit revision, revocation, reissuance, or termination, or of a notification of a planned change or anticipated noncompliance shall not stay any permit condition [Section 1a-4, 5, of the *Cabinet Provisions and Procedures for Issuing State-Origin Permits* incorporated by reference in 401 KAR 52:040 Section 23].
- e. This permit does not convey property rights or exclusive privileges [Section 1a-8 of the *Cabinet Provisions and Procedures for Issuing State-Origin Permits* incorporated by reference in 401 KAR 52:040 Section 23].
- f. Nothing in this permit shall alter or affect the liability of the permittee for any violation of applicable requirements prior to or at the time of permit issuance [401 KAR 52:040 Section 11(3)].
- g. This permit shall be subject to suspension at any time the permittee fails to pay all fees within 90 days after notification as specified in 401 KAR 50:038, Air emissions fee. The permittee shall submit an annual emissions certification pursuant to 401 KAR 52:040, Section 20.
- h. All previously issued permits to this source at this location are hereby null and void.

SECTION C - GENERAL CONDITIONS (CONTINUED)

2. Recordkeeping Requirements

- a. Records of all required monitoring data and support information, including calibrations, maintenance records, and original strip chart recordings, and copies of all reports required by the Division for Air Quality, shall be retained by the permittee for a period of at least five years and shall be made available for inspection upon request by any duly authorized representative of the Division for Air Quality [401 KAR 52:040 Section 3(1)(f) and Section 1b-IV-2 of the *Cabinet Provisions and Procedures for Issuing State-Origin Permits* incorporated by reference in 401 KAR 52:040 Section 23].
- b. The permittee shall perform compliance certification and recordkeeping sufficient to assure compliance with the terms and conditions of the permit. Documents, including reports, shall be certified by a responsible official pursuant to 401 KAR 52:040, Section 21.

3. Reporting Requirements

- a. (1) In accordance with the provisions of 401 KAR 50:055, Section 1, the permittee shall notify the Regional Office listed on the front of this permit concerning startups, shutdowns, or malfunctions as follows:
 - i. When emissions during any planned shutdowns and ensuing startups will exceed the standards, notification shall be made no later than three (3) days before the planned shutdown, or immediately following the decision to shut down, if the shutdown is due to events which could not have been foreseen three (3) days before the shutdown.
 - ii. When emissions due to malfunctions, unplanned shutdowns and ensuing startups are or may be in excess of the standards, notification shall be made as promptly as possible by telephone (or other electronic media) and shall be submitted in writing upon request.
- (2) The permittee shall promptly report deviations from permit requirements including those attributed to upset conditions (other than emission exceedances covered by Reporting Requirement condition a.(1) above), the probable cause of the deviation, and corrective or preventive measures taken; to the Regional Office listed on the front of this permit within 30 days. Other deviations from permit requirements shall be included in the semiannual report [Section 1b-V-3 of the *Cabinet Provisions and Procedures for Issuing State-Origin Permits* incorporated by reference in 401 KAR 52:040 Section 23].
- b. The permittee shall furnish information requested by the Cabinet to determine if cause exists for modifying, revoking and reissuing, or terminating the permit; or to determine compliance with the permit [Section 1a-6 of the *Cabinet Provisions and Procedures for Issuing State-Origin Permits* incorporated by reference in 401 KAR 52:040 Section 23].
- c. Summary reports of monitoring required by this permit shall be submitted to the Regional Office listed on the front of this permit at least every six (6) months during the life of this permit. For emission units that were still under construction or which had not commenced operation at the end of the 6-month period covered by the report and are subject to monitoring requirements in this permit, the report shall indicate that no monitoring was performed during the previous six months because the emission unit was not in operation.

SECTION C - GENERAL CONDITIONS (CONTINUED)

The summary reports are due January 30th and July 30th of each year. All deviations from permit requirements shall be clearly identified in the reports. All reports shall be certified by a responsible official pursuant to 401 KAR 52:040, Section 21.

4. Inspections

In accordance with the requirements of 401 KAR 52:040, Section 3(1)(f) the permittee shall allow authorized representatives of the Cabinet to perform the following during reasonable times. Reasonable times are defined as during all hours of operation, during normal office hours; or during an emergency:

- a. Enter upon the premises to inspect any facility, equipment (including air pollution control equipment), practice, or operation.
- b. To access and copy any records required by the permit.
- c. Inspect, at reasonable times, any facilities, equipment (including monitoring and pollution control equipment), practices, or operations required by the permit.
- d. Sample or monitor, at reasonable times, substances or parameters to assure compliance with the permit or any applicable requirements.

5. Emergencies/Enforcement Provisions

- a. The permittee shall not use as defense in an enforcement action, the contention that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance [Section 1a-3 of the *Cabinet Provisions and Procedures for Issuing State-Origin Permits* incorporated by reference in 401 KAR 52:040 Section 23].
- b. An emergency shall constitute an affirmative defense to an action brought for the noncompliance with the technology-based emission limitations if the permittee demonstrates through properly signed contemporaneous operating logs or relevant evidence that:
 - (1) An emergency occurred and the permittee can identify the cause of the emergency;
 - (2) The permitted facility was at the time being properly operated;
 - (3) During an emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and
 - (4) The permittee notified the Division as promptly as possible and submitted written notice of the emergency to the Division within two working days after the time when emission limitations were exceeded due to the emergency and included a description of the emergency, steps taken to mitigate emissions, and corrective actions taken.
- c. Emergency provisions listed in General Condition 5.b are in addition to any emergency or upset provision contained in an applicable requirement [401 KAR 52:040, Section 22(1)].

SECTION C - GENERAL CONDITIONS (CONTINUED)

- d. In an enforcement proceeding, the permittee seeking to establish the occurrence of an emergency shall have the burden of proof. [401 KAR 52:040, Section 22(2)].

6. Compliance

- a. Periodic testing or instrumental or non-instrumental monitoring, which may consist of record keeping, shall be performed to the extent necessary to yield reliable data for purposes of demonstration of continuing compliance with the conditions of this permit. For the purpose of demonstration of continuing compliance, the following guidelines shall be followed:
- (1) Pursuant to 401 KAR 50:055, General compliance requirements, Section 2(5), all air pollution control equipment and all pollution control measures proposed by the application in response to which this permit is issued shall be in place, properly maintained, and in operation at any time an affected facility for which the equipment and measures are designed is operated, except as provided by 401 KAR 50:055, Section 1.
 - (2) All the air pollution control systems shall be maintained regularly in accordance with good engineering practices and the recommendations of the respective manufacturers. A log shall be kept of all routine and nonroutine maintenance performed on each control device. Daily observations are required during daylight hours of all operations, control equipment and any visible emissions to determine whether conditions appear to be either normal or abnormal. If the operations, controls and/or emissions appear to be abnormal, the permittee must then comply with the requirements of Section C – General Conditions, 3a(2), of this permit.
 - (3) A log of the monthly raw material consumption and monthly production rates shall be kept available at the facility. Compliance with the emission limits may be demonstrated by computer program, spread sheets, calculations or performance tests as may be specified by the Division [401 KAR 50:055, Section 2].
- b. Pursuant to 401 KAR 52:040, Section 19, the permittee shall certify compliance with the terms and conditions contained in this permit by January 30th of each year, by completing and returning a Compliance Certification Form (DEP 7007CC) (or an approved alternative) to the Regional Office listed on the front of this permit in accordance with the following requirements:
- (1) Identification of the term or condition;
 - (2) Compliance status of each term or condition of the permit;
 - (3) Whether compliance was continuous or intermittent;
 - (4) The method used for determining the compliance status for the source, currently and over the reporting period, and
 - (5) For an emissions unit that was still under construction or which has not commenced operation at the end of the 12-month period covered by the annual compliance certification, the permittee shall indicate that the unit is under construction and that compliance with any applicable requirements will be demonstrated within the timeframes specified in the permit.

SECTION C - GENERAL CONDITIONS (CONTINUED)

- (6) The certification shall be postmarked by January 30th of each year. Annual compliance certifications shall be mailed to the following addresses:

Division for Air Quality
Ashland Regional Office
1550 Wolohan Drive, Suite 1
Ashland, KY 41102

Division for Air Quality
Central Files
803 Schenkel Lane
Frankfort, KY 40601-1403

- c. Permit Shield - A permit shield shall not protect the owner or operator from enforcement actions for violating an applicable requirement prior to or at the time of permit issuance. Compliance with the conditions of this permit shall be considered compliance with all:
- (1) Applicable requirements that are included and specifically identified in this permit; or
 - (2) Non-applicable requirements expressly identified in this permit [401 KAR 52:040, Section 11].

SECTION D - INSIGNIFICANT ACTIVITIES

The following listed activities have been determined to be insignificant activities for this source pursuant to 401 KAR 52:040, Section 6. While these activities are designated as insignificant the permittee shall comply with the applicable regulation and any level of periodic monitoring specified below.

<u>Description</u>	<u>Generally Applicable Regulation</u>
1. SRU reactor reheaters (EP-102, 103, 104) & Incinerator (EP-106)	401 KAR 59:015
2. Amine Reboilers (EU-200)	None
3. Utility Boiler (EU-300)	401 KAR 59:015
4. Amine Reclaimer (EU-400)	None
5. Glycol Reboiler (EU-600)	None
6. Plant Emergency Flare (EU-500)	401 KAR 63:015
7. Main and Standby Compressor (EU-700)	None